Effects of Traditional Versus Extended Word-Study Spelling Instruction on Students’ Orthographic Knowledge

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Abstract

The purpose of the study described in this article was to investigate the effects of traditional versus extended word study spelling instruction for third-grade within-word spellers on overall orthographic achievement and transfer of orthographic knowledge to untaught words. Although the sample size was small (16 students) and included only within-word spellers, results from the different measures are promising. Over the course of the school year, students in the extended word study group significantly outperformed those in the traditional spelling group in overall orthographic development and on one of two measures of transfer of low-frequency words. Treatment effects were strong across all significant measures.

Background

The skills required for learning to spell, read, and write are interrelated (Greenburg, Ehri, & Perin, 1998; Morris & Perney, 1984); consequently, spelling is an important part of the elementary school literacy curriculum. For example, in a longitudinal study with 6- and 7-year-old students, Juel, Griffith, and Gough (1986) investigated the relationships between word recognition, spelling, reading comprehension, and writing. Their results indicate that phonemic awareness and exposure to print influence spelling-sound knowledge which, in turn, influences spelling and word recognition. In both grades, abilities in spelling had a significant effect on writing. Over the course
of the 2-year study in Grades 1 and 2, Juel and her colleagues reported that, for students, importance of literacy skills changed from an emphasis on phonological awareness (sound manipulations) to orthographic awareness (letter grouping and understanding of syllable structure). In short, the changing skills that make us good spellers also make us good readers and writers.

Spelling instruction has changed little over the years. Issues surrounding spelling research and instruction include word frequency, the reliability of English, transfer of knowledge from known words to unknown words, and spelling development. In a meticulous study of first graders’ writings, Tremain (1993) found that word frequency affects spelling performance. The more times the children encountered high-frequency words (even difficult words), the better they became at spelling them and at distinguishing small differences among words for spelling and word recognition. Beers, Beers, and Grant (1977) found that first- through fourth-grade children misspelled low-frequency words two to eight times more often than high-frequency words. Repeated encounters with a word create a “word-specific” knowledge base from which to draw when performing literacy tasks. Ehri’s “amalgamated” theory suggests that word-specific knowledge is the result of a combination of factors that include not only the word’s frequency, but also its meaning and sound-letter connections and structures (orthography) (Ehri & Soffer, 1999).

Although there has long been controversy over the reliability of sound-letter correspondences, Hanna, Hanna, Hodges, and Roudorf (1966) reported that the structure of English is reliable when analyzed on three different levels of sound-letter relationships: simple phoneme-grapheme (sound-letter) correspondence, positional effects (syllable or orthographic structures), and effects of syllable stress. Recently, I applied the Hanna et al. study criteria using three different levels of sound-letter relationships to spelling generalizations and found that 43 of 45 generalizations met a 75 percent or greater reliability rate (Abbott, 2000). These studies confirm that English is reliable, but the relevance of that information to classroom instruction is a different issue.

Read’s (1971) work in the late 1960s and early 1970s linked the reliability of English to the development of students’ spelling skills. As Read investigated the invented spelling errors of kindergarteners, he found that the students’ spelling and misspelling patterns consistently and regularly changed over time. His work initiated a line of developmental spelling inquiry, known as the “Virginia studies” (see, e.g., Abouzeid, 1992; Bear & Templeton, 1998; Henderson, 1985; Invernizzi, Abouzeid, & Gill, 1994), which found that spelling knowledge progresses through distinct levels from alphabetic to letter patterns, syllable patterns, and finally meaning elements as students become skilled spellers, writers, and readers.

The Virginia model line of developmental spelling research has two instructional advantages. First, there is extensive spelling developmental research on which to build a solid instructional foundation. Second, this research has been translated into a classroom curriculum of explicit instruction known as “word study” (Bear, Invernizzi, Templeton, & Johnson, 1996). Word study recommends a sequence of spelling concepts and activities, including a categorization task for grouping common sounds or orthographic features in words known as “word sorting” (Barnes, 1989; Morris, 1982). In word sorting, the student is given 20 to 30 word cards, each displaying one word per card. The student examines each of the words, comparing and contrasting its features, and places the card under one of several pre-established categories.

The study described here extended the basic word-study curriculum, incorporating a “most common usage” strategy. During hands-on word work, average third-grade students, who typified the within-word developmental stage of the Virginia model, discovered the reliable phonics generalizations that corresponded to their developmental level. No other published research comparing this “extended word study” curriculum with other spelling methodologies exists.
Purpose

The purpose of the year-long study was to investigate whether extended word study, compared to traditional spelling instruction, led to noticeable differences over time in students’ orthographic knowledge and transfer of that knowledge to untaught words in both high- and low-frequency conditions. The study addressed the following questions:

- Does spelling instruction based on extended word study produce significantly better scores on pre- and post-test measures compared to traditional spelling instruction with typical third-grade students spelling at the within-word development stage?
- Does spelling instruction based on extended word study produce significantly better scores for transfer of orthographic knowledge with high- and low-frequency untaught words compared to traditional spelling instruction with these students?

Method

Design overview. To ensure separation of the type of instruction and word-frequency variables, the year-long study was divided into three phases: mid-August to October (phase I), November to January (phase II), and February to mid-April (phase III). Throughout the study, a comparison was made between two third-grade teachers who implemented instructional strategies that varied in both theory and practice. One strategy, traditional spelling instruction, was based on the use of a basal-suggested weekly spelling list. The second strategy, extended word-study spelling instruction, focused on the orthographic components of word spellings. To separate the effects of these instructional procedures from the effects of word frequency on the transfer of orthographic knowledge, students were evaluated under both high- and low-frequency spelling word conditions (high-frequency, phase I; low-frequency, phases II and III). The purpose for the change from high- to low-frequency words was to test the effect of word frequency on students’ ability to transfer orthographic knowledge. Students had a greater chance of already knowing how to spell high-frequency words than low-frequency words. Low-frequency words were more likely to force student use of alternative spelling strategies and allow for a more accurate measurement of orthographic knowledge.

To examine the effects of a different instructional delivery of orthographic information, there was an instructional change in phase III in the traditional classroom. This change -- introduction of minilessons about orthographic regularities with no follow-up or review instruction -- is described more fully in the classroom procedures section, below.

Participants. The study occurred in an elementary school (kindergarten to Grade 5) serving a low- to middle-income Euro-American neighborhood in a small community in northeast Kansas. Eight within-word spellers were selected at random for each of two third-grade classrooms; each class had a total enrollment of 24 students. Observational data indicated that the two teachers exhibited similarities in their quality of teaching and in the quantity of instructional time spent on spelling.
**Classroom procedures.** Teacher A used a traditional approach to spelling instruction throughout the school year, asking students to complete the daily activities noted in Table 1. Spelling lessons ranged from 20 to 60 minutes daily, averaging 45 minutes. All students in the class received the same spelling instruction, regardless of developmental level or spelling ability. Teacher A provided her students with a weekly 15- to 20-word spelling list constructed from suggested words in the basal reader and words from content area curriculum. However, for the first six Tuesdays in phase III, a 45-minute researcher-taught lesson replaced the usual “write each spelling word in a sentence” activity (see Table 1). During these lessons, the researcher gave the students a short introduction to the most common long vowel usage patterns. The students were then asked to take each word from their weekly spelling list (provided by the researcher for these 6 weeks only) and write it in the appropriate pattern column on a large sheet of computer paper. Finally, the class and the researcher had a short discussion about the results of the categorizations, relating them to common usage patterns.

<table>
<thead>
<tr>
<th>Day</th>
<th>Student Activity</th>
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<tbody>
<tr>
<td>Monday</td>
<td>Write each spelling word in print and in cursive. Choose five words, find the word in the text glossary or dictionary, and write the definition.</td>
</tr>
<tr>
<td>Tuesday</td>
<td>Write a sentence using each of the spelling words.</td>
</tr>
<tr>
<td>Wednesday</td>
<td>Put the 15 words in ABC order.</td>
</tr>
<tr>
<td>Thursday</td>
<td>Check for understanding. Students quiz each other on the list of words.</td>
</tr>
<tr>
<td>Friday</td>
<td>Spelling test.</td>
</tr>
</tbody>
</table>

Teacher A viewed spelling instruction as an extension of vocabulary study. During the weekly introduction of the words, she spent 25 to 30 minutes discussing each word’s meaning with the students. She also envisioned spelling instruction as including time for improving dictionary skills and sentence writing, with grammar and punctuation lessons. Although orthographic similarities may have been present among the words on the weekly spelling lists, Teacher A did not teach or discuss common word patterns on any list. During a typical spelling lesson, she began with a whole class minilesson and then gave detailed instructions and examples related to the lesson assignment. For example, on Wednesday, the students were to put the words in alphabetical order. The lesson began with a short minilesson that focused students’ attention on any part of the alphabetizing task the teacher thought might cause difficulty. These lessons ranged from procedural instruction on how to alphabetize to strategy lessons on how to avoid erasing if an overlooked word needed to be inserted in the growing alphabetical list. As students worked individually to complete their assignments, Teacher A circulated about the classroom, observing and providing feedback. Her classroom was quiet during work time.

For reading instruction, Teacher A used whole class grouping. Reading activities included reading the basal reader, assignments in the basal reader workbook, and teacher-created activities based on student need.
In Teacher B’s classroom, the focus of spelling instruction was on the phonetic and orthographic similarities of words. Teacher B used an extended word-study approach for spelling instruction throughout the course of the school year. For the base of her spelling program, Teacher B followed the *Words Their Way* (Bear et al., 1996) word-study curriculum, supplementing it with spelling generalizations that had been assigned to the appropriate developmental spelling level. The focus of these generalizations was on most common usage. For example, as the students learned the possible long a spellings, they also learned that the “most common usage” of long a in the middle of a syllable is *a*-consonant-silent *e*, as in *make*; a less common spelling of long a in the middle of a syllable is *ai*, as in *rain*.

A block of 45 minutes a day was set aside for extended word-study instruction. Each day, Teacher B rotated the three spelling groups (letter name, within-word, and late within-word/early syllable-juncture spellers) through a sequence of three activities: seatwork, computer work, and teacher-directed small-group instruction. During seatwork time, the students completed a word-sort activity, found and listed words in books that fit the current sound pattern, or quizzed one another on words and patterns from their word-sort cards. Students were allowed to work in groups or individually. Computer work was not necessarily related to spelling instruction. Students worked individually or in pairs on activities such as typing their word-sort list, playing language arts and math games, or typing their compositions.

During small-group instruction, Teacher B guided students through the general sequence of student activities listed in Table 2. The number of days spent on each of the activities varied depending on students’ progress. Spelling units focused on common usage patterns for a particular sound. Each cycle of the student activities listed in Table 3 lasted from 2 to 4 weeks. At the beginning of each unit, the students generated a list of 50 to 70 spelling words that contained “the sound” for the unit (later typed by Teacher B for word-sorting activities). Over the next few lessons, as the within-word student group categorized the words into different spelling patterns, Teacher B facilitated a group discovery of the most common usage patterns, based on the spelling generalizations.

<table>
<thead>
<tr>
<th>Sequence</th>
<th>Student Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Brainstorm a set of words for a teacher-supplied sound.</td>
</tr>
<tr>
<td>2</td>
<td>Divide the words into groups of common spellings</td>
</tr>
<tr>
<td>3</td>
<td>Teacher leads the students to discover most common usage patterns and applicable generalizations, and to relate this new information to past discoveries.</td>
</tr>
<tr>
<td>4</td>
<td>Spend numerous days working at group and individual activities to reinforce discoveries of most common usage patterns and generalizations.</td>
</tr>
<tr>
<td>5</td>
<td>Teacher often administrates nongraded formative quizzes to assess progress.</td>
</tr>
</tbody>
</table>

Table 2
Extended Word-Study Instructional Plan, Teacher B
When a quiz suggest that students have mastered common spellings associated with the sound, the process begins anew.

The remaining small-group lessons for the unit involved working with the sound’s different spelling structures, not the spellings of specific words or words from a word list. Teacher B and her students would discuss each of the patterns, noting the common “word families” or “rimes.” Teacher B also emphasized to her students that the best strategy for guessing the spelling of an unknown word was to use the most common spelling pattern. Throughout the unit, Teacher B gave brief spelling tests as formative quizzes. No grades were taken on students’ performance. The quizzes were used as a benchmark to determine student mastery and future instruction.

During extended word-study time, there was a constant hum of student noise in Teacher B’s classroom, which, for the most part, was related to academic discussion and activity. Small-group discussions were often lively as students made and discussed their new discoveries about words, sounds, and patterns.

For reading instruction, Teacher B divided her students into three academic groupings. Instead of using the basal reading series, she chose a theme and provided each group with level-appropriate literature that fit the theme. Reading instruction was less skills-based than in Teacher A’s classroom.

**Data collection measures and procedures.** The focal point of this study was to examine the effects that different instructional environments have on students’ orthographic development over the course of a school year. It should be noted that orthographic growth and knowledge should not necessarily be equated with spelling achievement. For example, from the view of spelling achievement, it makes no difference if a student spells *train* as TRANE or TRAN; either is judged an incorrect spelling. In terms of orthographic knowledge, however, there is a substantial difference between TRANE and TRAN. The former indicates a more advanced orthographic knowledge: the student understands that two vowels are usually present in one-syllable words with long vowel sounds. The student who spells *train* as TRAN lacks long vowel knowledge and is less developmentally advanced. Spelling achievement is the result not only of orthographic knowledge but also of factors such as the student’s exposure to print, reading level, and word-specific knowledge.

Morris and Perney (1984) found that by using a modified scoring procedure they were able to observe greater detail in the orthographic growth patterns of first-grade students’ spelling. The measures used in this study were also chosen in order to measure orthographic growth and knowledge.

The Qualitative Spelling Inventory (Bear et al., 1996) contains 27 spelling words that are divided into typical characteristics found in the last four levels of the Virginia model of spelling development. For example, the words in set 2 include spelling concepts typical for within-word spellers, such as long vowel spellings and a two-syllable word with short vowels. The study used student spellings of the inventory’s words for two different assessment purposes:

1. As a pretest selection tool for identifying students at the within-word level

   After Teachers A and B administered the 27-item inventory, the researcher analyzed and categorized each student’s misspellings as specified by the inventory’s scoring procedure. Then each student was assigned to one of three developmental levels: letter name,
within-word, or early syllable juncture. From each class, 8 within-word students whose parents had given consent for participation were randomly selected for the study.

3. To obtain a quantitative measure of orthographic growth on transfer words from the August pretest to the April post-test
Pre- and post-test scoring with the Orthographic Spelling Guide (see Table 3) included the first 15 words of the inventory. The guide offers a generic scoring system that could be consistently applied to pre- and post-tests and to the biweekly transfer spelling tests (see below). Scoring for each word’s spelling was based on a four-point system (0 to 3).

Table 3
Orthographic Spelling Guide for Scoring Spelling Tests

<table>
<thead>
<tr>
<th>Sample Spelling</th>
<th>Score</th>
<th>Characteristics of Word Spelling</th>
</tr>
</thead>
<tbody>
<tr>
<td>TRAIN</td>
<td>3</td>
<td>Correctly spelled</td>
</tr>
<tr>
<td>TRANE</td>
<td>2</td>
<td>Orthographic structure or spelling component is correctly identified with the substitution of a viable alternative spelling.</td>
</tr>
<tr>
<td>TROAN</td>
<td>1</td>
<td>Orthographic structure or spelling component is correctly identified with the substitution of an inappropriate alternative spelling.</td>
</tr>
<tr>
<td>TRAN</td>
<td>0</td>
<td>Orthographic structure or spelling component is incorrectly identified.</td>
</tr>
</tbody>
</table>

Approximately twice a month each classroom teacher administered a four-word transfer spelling test that was scored using the Orthographic Spelling Guide. Transfer words matched the studied orthographic patterns but had not appeared on either the traditional spelling group’s weekly spelling lists or on the extended word-study group’s student-generated lists.

The first four transfer tests (during phase I of the study) included only high-frequency words; the last eight tests (during phases II and III) included only low-frequency words. Level of frequency was determined with the Word Frequency Book (Carroll, Davies, & Richman, 1971), which contains a subset frequency distribution for each grade level. The third-grade median standard frequency index (SFI) score of 45 was obtained and used as the dividing score for high- and low-frequency words. For third-grade students, high-frequency words with an SFI score greater than or equal to 46 were commonly understood words that would have appeared numerous times in primary-level running text. An SFI of 45 or less was designated as low-frequency. The meaning of many of these words would be unknown to third graders (e.g., moot, glade, slew) and would rarely -- if ever -- appear in third-grade running text.

An interrater reliability measure was conducted for 25 percent of the pre/ and post-tests and for 25 percent of the 12 biweekly transfer tests. Each set of assessments was randomly selected and rescored by a competent, trained teacher independent of the actual study.
Interrater reliability was 94 percent for the pre/ and post-tests and 95 percent for the 12 biweekly transfer tests.

Results and Discussion

Overall orthographic knowledge (pre- and post-tests). A t test indicated no significant difference between the traditional and extended word-study groups’ pretest scores. In order to compare the post-test scores, an ANOVA was performed. The two different instructional groups were treated as one independent variable and post-test difference scores as a dependent variable. Effect size was also calculated. There was a significant main-effect difference between the two groups, $F(1,13) = 8.3, p = 0.013$. An eta-squared of .39 is a very strong treatment effect (Stevens, 1996, recommends that an eta-squared of .01 be interpreted as a small effect, .06 as medium, and .14 as large).

Percentage means and standard deviations are presented in Table 4. The different types of spelling instruction produced distinct contrasts in student performances. Results from pretest to post-test indicate that, over the course of the year, extended word-study spelling instruction better advanced students’ overall orthographic development than did traditional spelling instruction.

Table 4
Mean Scores (Standard Deviations) on Pre- and Post-Tests for Both Instructional Groups

<table>
<thead>
<tr>
<th>Condition</th>
<th>Pretest</th>
<th>Post-Test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional</td>
<td>70.1 (9.3)</td>
<td>86.8 (9.2)</td>
</tr>
<tr>
<td>Extended word study</td>
<td>70.0 (7.1)</td>
<td>93.9 (4.4)</td>
</tr>
</tbody>
</table>

Transfer of orthographic knowledge with high- and low-frequency words. An analysis of variance of repeated-measures procedure, condition, and test time over the four tests (2 x 4) was used to measure the effects of high- and low-frequency words on transfer of orthographic knowledge. Transfer words in phase I were high frequency. In phase I, there were no significant interaction or main-effect between-group differences. Raw score means and standard deviations are presented in Table 5. Transfer words in phases II and III were low frequency. Phase II analysis of variance for repeated-measures results for transfer words produced no significant interaction effect. There was, however, a significant main effect between-group difference, $F(1,14) = 5.82, p = 0.03$. The extended word-study group performed significantly better in transferring its spelling knowledge to low-frequency words with similar orthographic structures. The between-subjects effects eta-squared was 0.121, indicating a moderately strong treatment effect. There were no interaction or main-effect significant results found for transfer words in phase III.

Table 5
Raw Score Means (Standard Deviations) for 12 Biweekly Tests of Transfer Words

<table>
<thead>
<tr>
<th>Condition</th>
<th>Phase I</th>
<th>Phase II</th>
<th>Phase III</th>
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</table>
This study highlighted how an interplay between word frequency, orthographic knowledge, and developmental level might lead to different student response to low-frequency words (for further in-depth discussion, click here). The students in this study were all average third-grade within-word spellers, and they were all tested on the same transfer word lists. What differed was their instruction about orthographic information.

In the high-frequency condition there was little difference between the two groups of students. Orthographic knowledge appeared to play less of a role than word-specific knowledge in the students’ word spellings. For phase II low-frequency transfer words, group differences were significant. Although there was a drop in scores in both groups, the extended word-study group was less affected by the change from high to low frequency than the traditional spelling group. The better orthographic quality of the extended word-study group’s responses appears to indicate that orthographic knowledge took on greater importance in this phase.

In phase III, transfer words remained low frequency, but there was a change in instruction for the first 6 weeks of phase III in the traditional classroom and a loss of significant transfer results. Although the extended word-study group consistently more often chose the most common usage spelling pattern, the traditional spelling group became more consistent about use of the most common pattern as long as they were receiving weekly lessons in the strategy. When the minilessons stopped, their transfer mean score dropped. Note, however, that because all the students in the traditional classroom received the minilesson, there was no control group with which to compare scores. Therefore, it is not possible to report with certainty that the improvement in transfer scores was the result of the minilessons or that the drop of the last transfer test score resulted from withdraw of minilesson support.

**Orthographic growth versus academic achievement in spelling.** As stated above, there is a difference between orthographic knowledge and spelling achievement. Judgments about orthographic knowledge and level of orthographic development result from the way in which the word is spelled, correctly or incorrectly. Incorrect spellings often provide more information about a student’s level of orthographic development than do correct spellings.
because a misspelling indicates a lack of sufficient word-specific knowledge. Correct spellings are often the result of word-specific knowledge with little notice of the word’s orthographic structure.

Developmental spelling research does indicate that as students develop and gain sufficient orthographic knowledge within a level of development, correct spellings increase. The more exposure to a word, the more we remember the word-specific information, including the general word structure or orthography (Beers, Beers, & Grant, 1977).

Interestingly, there was no significant difference between the two groups on spelling achievement. The lack of significance can be attributed to assessment design for both the pre-/post-test spelling inventory and the low-frequency transfer words. For phase II low-frequency long vowel transfer words where there was a significant orthographic difference between the two groups’ word spellings, the extended word-study students either spelled the word correctly or used the most common usage spelling pattern 74 percent of the time. The traditional group spelled low-frequency long vowel transfer words correctly or used the most common usage only 36 percent of the time. However, when I chose the transfer words for the study, unfortunately I focused only on words that were low frequency and fit the patterns the students had studied. Only 30 percent of the long vowel words I chose followed the most common usage pattern. In order to assess if the students’ spelling achievement improved as a result of orthographic instruction, the words in the assessment should have reflected the orthographic pattern percentages that naturally occur in English spellings. That is, with this type of design, 85 percent of the long vowel words should have followed the most common usage pattern.

Although a claim cannot be made that the students would have demonstrated significant achievement differences had 85 percent of the words followed the most common usage pattern, the high percentage of extended word-study student use of the strategy suggests that such a scenario is likely.

The pre-/post-measure that showed significant differences in students’ overall orthographic growth also failed to show significant correct spelling difference between the two groups. The intent of the Bear et al. (1996) inventory is to focus on children’s incorrect spellings, not their correct spellings. Words in the inventory are all common high-frequency keywords that Bear and his colleagues noted children, depending on their level of development, often used and misspelled in their writings. From this extensive collection of misspellings the researchers of the Virginia studies were able to define, characterize, and then create stages of children’s orthographic development. Their keywords are well chosen for the purpose of ascertaining a student’s level of orthographic development for instructional placement. Their inventory is not representative of the naturally occurring percentages of orthographic patterns in English. In the within-word portion of the inventory, only one of the five long vowel words followed the most common usage pattern. Therefore, differences in academic achievement were not expected.

**Limitations of the Study**

This study had a small sample size and students were from a single ethnic background. It
focused only on the expected developmental level for average third-graders -- that is, the within-word level. These factors make generalization to other populations inadvisable. Future study in the area of extended word-study spelling instruction should focus on a range of grade levels, greater variety in student population in terms of socioeconomic status and ethnicity, on a variety of developmental levels, and a range of student ability within a typical classroom setting. This would allow for greater generalization to numerous student populations along the entire range of spelling development.

To establish a causal link between improvement in measures of transfer words and the minilessons introduced in phase III to the traditional instruction group, an additional control group would have been needed. Future study should investigate the use of traditional spelling with the use of generalization minilessons as an instructional condition.

Finally, words chosen for the low-frequency transfer assessments did not reflect the naturally occurring syllable pattern percentages found in English spellings. Remedying this flaw would lead to clarification in the issue of orthographic improvement versus improvement in spelling achievement.

Conclusions

The findings of this study are promising because they provide insight into how teachers’ instructional choices affect students’ reservoirs of orthographic knowledge in two primary areas. The first area highlights the potential of teaching students spelling generalizations using the most common usage pattern strategy. By using low-frequency transfer words, the study was able to isolate student knowledge of orthographic concepts from word-specific components under two differing instructional environments. Students whose instruction included a word-study format with a most common usage strategy produced more sophisticated orthographic spellings than their traditionally taught peers. The most common usage strategy provided students with a detailed road map of orthographic associations based on the specific constructs of English orthography. This allowed them to generalize and transfer learned orthographic information more readily than did the students in traditional spelling group.

Ehri and Wilce (1987) found a similar mechanism of transfer among kindergarten students who could read letter names but not spell consonant cluster words. One group of these students learned to spell by segmenting words, and the other just practiced matching letters to their sounds. The group that learned to spell by segmenting outperformed the sound-letter group in the transfer skill of reading words. Ehri and Wilce believed that it was not necessarily the students’ improved ability to segment and blend specific sounds that improved their ability to read new words but that they had become better at remembering and transferring knowledge about the associations between letters in spelling and the sounds needed for word pronunciations. Learning the most common usage strategy appeared to help students build hierarchical associations about spelling options for the sounds of English. This more complete hierarchical structure may have better enabled students to transfer their knowledge to unknown words over the course of the school year, and to outperform significantly their traditionally instructed peers on the post-assessment.
The second issue addresses student rote memorization of specific word lists for a few words as opposed to student observation and discovery of orthographic patterns for a large number of words. The goal of spelling instruction has always been to promote the transfer of learned spelling information to unknown words and to other literacy areas of reading and writing. During our elementary school years we must learn to spell thousands of words that do not appear on the spelling word lists offered through traditional spelling instruction. The belief behind spelling lists is that if we give students a small percentage of words to memorize, they will transfer enough spelling knowledge to figure out how to spell a large number of words. That is, traditional spelling instruction emphasizes the learning of word-specific knowledge with the hope of an osmosis-like infusion of orthographic knowledge that can then be generalized and transferred. Deyer, Shankweiler, and Luke (1993) found that students who could effectively integrate word-specific knowledge early in their school careers were the best spellers.

While this approach may work for some students, it is not a very efficient method, as evidenced by the common teacher complaint that even average students often fail to transfer spelling knowledge gained from the weekly spelling test to their written products (Gill & Scharer, 1996). For students with spelling challenges, the effect of a type of instruction that moves from word specific to generalized orthographic knowledge is more pronounced. Berninger et al. (1998) found that explicit instruction of phonologic and orthographic concepts was needed for students with disabilities to achieve mastery of concepts such as one-to-one sound-letter correspondence, as well as for more complex connections such as multiletter relationships (e.g., igh for the long i sound). Traditional approaches to spelling in the classroom fail to provide such instruction.

Extend word-study approaches spelling instruction from the opposite direction. The process moves from acquisition of orthographic knowledge to word-specific knowledge. Instruction is provided within the student’s instructional level based on the student’s current level of orthographic knowledge. The students in the extended word-study group did not memorize lists of specific words. Instead, they generated large lists of words that fit a sound, and then categorized those words into common orthographic patterns with an emphasis on the most common usage. As students learned these orthographic patterns, word-specific knowledge was folded in as an additional connection that added to their overall spelling knowledge. Results with this small group of average spellers suggest that a lack of word-specific knowledge in spelling unfamiliar low-frequency words was less of a handicap for the extended word-study students than for the traditional spelling students because the former were better able to generalize and transfer orthographic information.

The fact that teachers have for more than a century used spelling lists as the method of spelling instruction does not necessarily mean that it is the best way to teach spelling. Continued use of this traditional method may stem from a lack of knowledge that there are viable alternatives. One alternative that builds on the traditional method is the minilesson approach used in the traditional instruction group during phase III of this study. There was some evidence that this method improved student transfer of orthographic knowledge. This relatively minor change in instruction would allow teachers and students to become more familiar with most common usage patterns.

A second more dramatic alternative is the Bear et al. (1996) Words Their Way word-study curriculum. Use of this curriculum would move teachers toward thinking of spelling instruction within a developmental framework and encourage teachers and students to examine the commonalities in English words. A related alternative would be the
implementation of the extended word-study program used for this study, which adds the most common usage pattern strategy to the Bear et al. curriculum. In addition to use of a developmental framework, word commonalities are more precisely defined by usage patterns, which the preliminary findings of this study indicate improve overall orthographic knowledge.

Orthographic knowledge provides us with a framework for understanding what we say, read, and write. Improving orthographic knowledge allows us to make better “best guesses” when spelling and reading words for which we do not have enough word-specific knowledge. In light of recent research on spelling development, the reliability of spelling generalizations, and the importance of spelling’s link to other literacy skills, extended word study just might be the key component needed to help students improve word recognition, increase writing skills, and remember their spelling words after Friday’s spelling test.

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